## TIME MRCHINES

### **Introduction:**

The TimeMachines GPS splitter products were created to further simplify the setup of multiple time servers on a single antenna. Designed specifically for GPS signal splitting in timing environments by TimeMachines. These basic indoor splitters are made with a simple PCB design and 3D printed enclosure to maintain the TimeMachines commitment to price and performance. Two models exist:



## **2 Port Splitters:**

| Part Number | Description  | Port Configuration     |
|-------------|--|------------------------|
| 760-602-000 | Passive 2 Port Splitter, SMA                             | 1 DC Pass, 1 DC Block  |
| 760-602-PWR | Passive 2 Port Splitter with Power Injection Option, SMA | DC Block on both ports |

| Electrical Specifications |                   | Mechanical Specifications |                        |  |
|---------------------------|-------------------|---------------------------|------------------------|--|
| Frequency                 | 1575.42MHz        | Size (WxDxH)              | 3.1 x 2.1 x 0.9 inches |  |
| Impedance                 | 50 Ohm            | Material                  | PLA                    |  |
| Insertion Loss            | 3.6 dB            | Connectors                | SMA Female             |  |
| Isolation (min)           | 20 dB             | РСВ                       | RoHs, Lead Free        |  |
| Input VSWR (max)          | 1.5 : 1           | Temp Range                | -40 to +80 C           |  |
| Output VSWR               | 1.5 : 1           | Power connector           | 2.1mm x 5.5mm (-PWR)   |  |
| DC Voltage MAX            | 9V (-PWR Model)   | Power Injector Voltage    | 9V                     |  |
| DC Current MAX            | 50mA (-PWR Model) |                           |                        |  |

#### 760-602-000, Non Power Injector Version

The 760-602-000 does not have a connector for external power injection. One of the two output ports will pass DC power from the time server to the antenna to power the antennas internal amplifier. The second port will block the DC power that the time server puts on the center conductor of the SMA connector. There is no need to disable the power output on the TimeMachines products. Some time servers will actually generate an error message if their antenna output current is zero. Generally this feature can be disabled if it is causing an issue. The TimeMachines products will not exhibit this behavior.



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#### 760-602-PWR, Power Injector Version

The 760-602-PWR version of the 2 port splitter has the ability to inject power on the center conductor of the antenna cable. The voltage present on the 2.1mm power connector will be placed onto the antenna center conductor. The included 9V supply allows a higher voltage to be placed on the antenna cable than the built in 5V supplies of the TM1000A/2000A products. This can only be used with the outdoor antenna that TimeMachines sells, it is to high of voltage for the included puck antennas. This allows for cable runs greater than the 250ft maximum supported by the time server internal power supplies and the 40dB outdoor antenna when using RG58. Both output ports of the 760-602-PWR product are DC blocked. The TimeMachines products do not need to have their internal power injectors disabled to function correctly. Other



vendors products may need to have their internal supplies disabled or ignored to prevent errors.

### **4 Port Splitters:**

| Part Number | Description  | Port Configuration    |
|-------------|--|-----------------------|
| 760-604-000 | Passive 4 Port Splitter, SMA                             | 1 DC Pass, 3 DC Block |
| 760-604-PWR | Passive 4 Port Splitter with Power Injection Option, SMA | DC Block on all ports |

| Electrical Specifications |                   | Mechanical Specifications |                        |
|---------------------------|-------------------|---------------------------|------------------------|
| Frequency                 | 1575.42MHz        | Size (WxDxH)              | 3.6 x 3.0 x 0.9 inches |
| Impedance                 | 50 Ohm            | Material                  | PLA                    |
| Insertion Loss            | 6.6 dB            | Connectors                | SMA Female             |
| Isolation (min)           | 20 dB             | PCB                       | RoHs, Lead Free        |
| Input VSWR (max)          | 1.5 : 1           | Temp Range                | -40 to +80 C           |
| Output VSWR               | 1.5 : 1           | Power connector           | 2.1mm x 5.5mm (-PWR)   |
| DC Voltage MAX            | 9V (-PWR Model)   | Power Injector Voltage    | 9V                     |
| DC Current MAX            | 50mA (-PWR Model) |                           |                        |

The 760-604-000 and 760-604-PWR operate the same way as their 760-602-XXX series counterparts, please see the previous sections, with the addition of two extra ports.





TimeMachines Splitter Specifications and Use Manual | Page 2Specifications Subject to Change without NoticeWeb / timemachinescorp.comEmail / tmsales@timemachinescorp.comPhone / (402) 486-0511